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ABSTRACT

The aim of this paper is to develop a dynamic view of training and professional development of teachers, focusing particularly on the training of less effective and innovative teachers and on the relationship between teachers' self-efficacy and teacher learning. Teachers' self-efficacy is regarded as the extent to which teachers expect they can affect student learning and can change in response to information from a given task or observation of a successful model. Low self-efficacy prevents teachers from adapting new ideas, concepts and teaching practices that they learn about informally in their daily environment or in formal training sessions, while high self-efficacy teachers will be open to experiment with and reflect on new teaching concepts and to incidental and informal learning opportunities within their daily task environment. Self-efficacy also affects how long teachers will persist in experimentation with new practices in the face of implementation problems in the classroom. Several models for teacher learning and development are discussed, including concept-based, experience-based, and teacher-as-researcher. Training is considered successful when the provided knowledge "provokes," stimulates, and guides teachers to use and integrate new concepts and skills. The paper concludes that training can be used to acquaint teachers with central concepts or new teaching perspectives, and to provide a means for developing and trying out these perspectives. Assessment of a teacher's self-efficacy will affect the acceptance and use by the teacher of the training concepts; evaluation and feedback are necessary conditions for teacher training and development. Finally, the "confusion" of teachers' existing, internalized concepts and beliefs with "conflicting" externally provided training concepts stimulates and challenges teachers to change routines and to experiment with new insights and skills. (ND)

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A DYNAMIC VIEW OF TRAINING FOR THE PROFESSIONAL DEVELOPMENT OF TEACHERS[1]

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A DYNAMIC VIEW OF TRAINING FOR THE PROFESSIONAL DEVELOPMENT OF TEACHERS

1. Introduction

In an article on teacher efficacy and attitudes towards instructional innovation published in 1988, Guskey points at the high expectations that generally have accompanied staff development programs. Despite these high expectations the effects of staff development programs seem to lead to the conclusion that teachers who are already highly effective and innovative may be more open and receptive to the new practices and learning opportunities offered by these programs than their less effective and innovative teacher-colleagues. Stated differently: teachers who truly need new knowledge, skills, and attitudes may remain uninvolved in teacher training and staff development programs.

The aim of this paper is to develop a dynamic view of training and professional development of teachers. In this dynamic view the potential of training to focus on the learning of skills and specific behaviors is discussed as a favourable characteristic of training when the learning of less effective and innovative teachers is pursued. To elaborate this dynamic view the relationship between teachers' self-efficacy and teacher learning is selected as a case. The analysis of this relationship is the starting point for the discussion of training and the professional development of teachers within the context of their perceived work environment.

2. Self-efficacy and teacher development

Teachers' self-efficacy is regarded as the extent to which teachers expect they can affect student learning. According to Bandura, the relationship between cognition or motivation and performance is mediated by self-efficacy. Self-efficay is situation-specific. For example, in one of our research projects we show that teachers' self-efficacy is task-specific: teachers (and principals) differ in their self-efficacy for pupil-oriented and school-oriented tasks.
Self-efficacy can change in response to information from several sources. A powerful source of information is 'performance accomplishment', this is the succesful performance of a given task. Another powerful source of information is the observation of a successful model.

Ample evidence shows that teacher's self-efficacy is related to their rejection or acceptance of new information that is presented to them, and their use of that information. These findings can be explained by self-efficacy theory and related theories (for example theory on defensive behavior in organizations).

Low self-efficacy is generally associated with avoidance behavior and defensive reactions to threatening situations. New teaching concepts that are too dissonant with the beliefs of low self-efficacy teachers will be threatening and anxiety provoking experiences, that result in defensive behaviors by these teachers. Low teacher self-efficacy implies a feeling of loss of control over classroom events and pupil learning, and a preference for daily routines instead of experimentation in unexpected situations. Low self-efficacy prevents teachers from adopting new ideas, concepts and teaching practices that they learn about when their daily task environment provides them with incidental and informal learning opportunities, or in formal training sessions. High self-efficacy teachers, on the other hand, will be open to experiment with and reflect on new teaching concepts and to incidental and informal learning opportunities within their daily task environment.

The use of new information by teachers and the implementation and incorporation of new teaching practices is a long-term process. Learning from a lack of success is as important in this process as learning to feel efficacious when things go well. Self-efficacy affects how long teachers will persist in experimentation with new practices in the face of implementation problems in the classroom. When new practices are to be used in the classroom, self-efficacy affects how much effort teachers will expend on learning to implement them. Low self-efficacy is a condition in which teachers give up sooner when implementation problems are encountered, and in which teachers rely on routinized activities. High self-efficacy teachers, on the other hand, appear to be most receptive to the implementation of new instructional practices. The result is that low-self-efficacy teachers have a lower chance of gaining positive experiences with the use and implementation of new teaching practices in the classroom, than do high self-efficacy teachers.

Successful performance is an influential source of efficacy information because it is based on personal mastery experiences. Experiences of success in the use and implementation of new teaching concepts will affect teachers' self-efficacy in a positive way. Positive change in self-efficacy will be most likely to occur in those teachers who feel efficacious enough to

experiment with new teaching concepts and to continue experimenting in the face of obstacles.

Theoretical insights and research findings together suggest two inter-related processes (figure 1):

- achievement in the context of a particular learning task fosters a high level of teachers' self-efficacy;
- a high level of self-efficacy is associated with future learning.

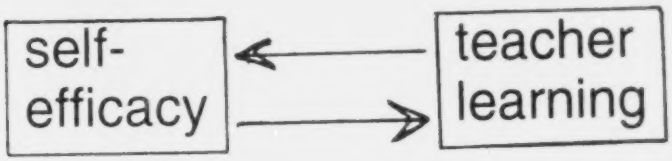

Figure 1. The dynamic relationship between teacher's self-efficacy and teacher learning

These inter-related processes constitute a dynamic relationship between teachers' self-efficay and teacher learning. This dynamic relationship makes the disappointing results of staff development and training programs with regard to poorly performing teachers more understandable.

The relationship between self-efficacy and learning is a case to demonstrate the dynamic view on teacher learning and professional development. Comparable arguments can be put forward to analyze the relationship between teacher learning and organizational factors, for example teacher collaboration. Teacher collaboration can be regarded as a condition for teacher learning within their task environment and the context of the school. However, when collaboration is a contrived condition within the school there is only a minor opportunity for teachers to learn about the positive effects of teacher collaboration on teaching and student learning. Teacher development and teacher collaboration are mutually reinforcing each other when two or more teachers are engaged in a process in which learning to appreciate collaboration is as much an objective as learning to implement new teaching practices.

3. A dynamic view of teacher learning and development

Teacher learning and teacher development are conceived of as a dynamic proces that is embedded in the interaction between the teacher's conceptualizations and meanings and the

teacher's task environment and work setting.

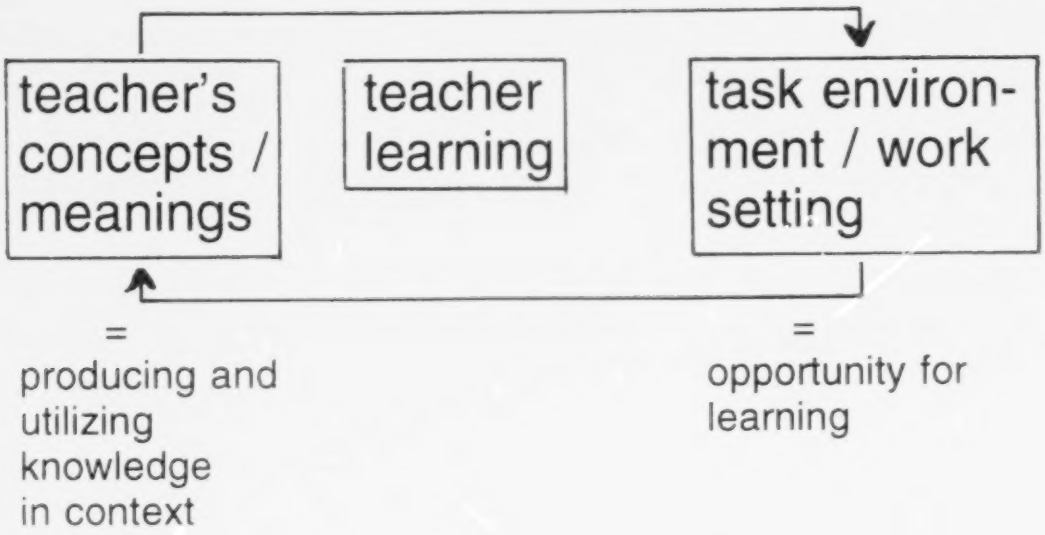

Figure 2. A dynamic view of teacher learning

Central are the teacher and the teacher's perceived task environment. The teacher and the perceived task environment continually interact. Building on this interaction the task environment is an opportunity for learning for the teacher. Within this learning process the teacher is producing and utilizing knowledge in context. Changes in the teacher's task environment are the result of this knowledge production and knowledge utilization by the teacher. Evaluating these changes and teachers' feedback about the effects of these changes and the role they have played in the change process is essential in training for professional development.

The implication of this dynamic view is that training for professional development should start from goals and planning mechanisms at different levels of specifity. The goals regarding the acquisition of specific teaching concepts and skills in the training can be specified before the training starts, as well as the plannig to reach these goals (*feedforward*). Besides, goals regarding the development of teacher's self-efficacy and the teacher's appreciation of task environment factors like collaboration with colleagues should be an integral part of the training

program as well. These goals are less specific, and the completion of these goals is primarily based on evaluation. This explication of learning events can only be planned to a limited extend before the training starts (*feedback*). The trainer will play a crucial role in managing the occasions for feedback effectively.

4. Teacher training for the professional development of teachers

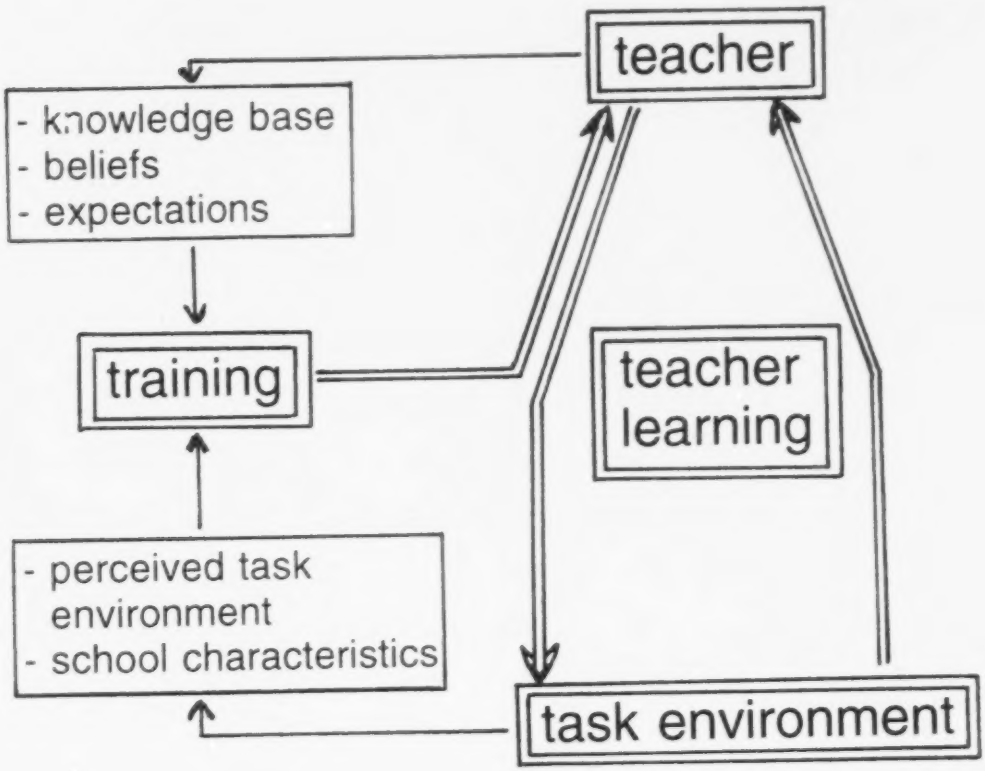

Figure 3. Training for professional development and the interaction with teacher and task environment.

Cognitive factors exert considerable, but not exclusive, influence on professional development. Learning new concepts and skills is an important aspect of teacher development. Although their impact should not be over emphasized, the impact of learning new concepts and skills should neither be ignored.

Unlike in other professions, in the field of education training and professional development seem to be regarded more and more as unrelated or even as opposites. Training has become associated increasingly with a perspective on teaching as a technical skill, and with the development of competencies in specific behaviors. In this paper we argue that training can play a fruitfull role as an instrument to further the professional development of teachers.

The aim of training is to to affect the teacher's knowledge, skills, attitudes and performance. The knowledge provided by the training intervenes in the interaction between teacher and task environment (figure 3). The training is successful when the provided knowledge 'provokes', stimulates, and guides teachers to use and integrate new concepts and skills. Whether this teacher learning actually occurs is at least partly determined by the extent to which the training program is:

- consistent with the teachers' perception of their task environment, and confined to their perception of the task environment and work setting;
- related to teachers' existing concepts, beliefs, meanings and expectations.

Training programs that successfully connect the existing professional culture with professional development must take the following issues into account. These issues are presented here as dillemas:

- The structure of the teacher's available knowledge base; conceptually based vs. experience based restructuring;
  - the key role training lies in the clear presentation of core information, leaving it to the teacher to assimilate it into his or her own knowledge structure
  - the training design must easure that a sufficient amount of the teacher's experience is communiucated during the training
- Providing opportunities for learning; providing instruction oriented vs. intervention oriented practice;
  - focus on definition and explanation by the trainer
  - focus on exchange between trainer and trainee
- Production and communication of validated knowledge; utilization of research based information vs. inquiry based production of information;
  - dissemination: external, research-based information is given to teachers; advantages: explicitness and focus, the teacher can rely on a sometimes extensive knowledge base
  - inquiry or teacher-as-researcher: teachersconstruing knowledge of their own; advantages: helps to set standards for being systematic and active

- interaction: equal communication between trainer and teacher about research-based information.

In our chapter on training for the professional development of teachers we analyzed four divergent training programs in terms of these dilemma's. This analysis shows that starting from the three dilemmas more than two 'configurations' of training designs are possible for a training program to be effective. The teacher's responsibility for his own learning and the training models that can be adopted are mutually related. This calls for an active search and construction of relevant training models regarding the three dilemmas. For example, conceptual training methods seem to promis results with respect to lasting conceptual change in teacher action and thinking. On the other hand, experience-based models seem to yield greater acceptance of presented knowledge and an active production of knowledge under the control of teachers.

In the constructivist view of training and teacher development the relation between concepts that are central in training and the existing knowledge base and beliefs of teachers is emphasized. The model presented in figure 3 gives rise to a broader perspective upon the teachers' point of departure with regard to training and development. Training should be compatible with and sensitive to:

- the existing knowledge base and skills of the teacher;
- the teacher's expectations and beliefs;
- the teacher's perception of the task environment and school characteristics.

In training the teacher's knowledge base, beliefs, expectations and perceptions should not be taken for granted, nor should these be ignored. The concepts and skills that are presented in training should be so new and exciting that teachers feel 'provoked' and stimultated to experiment with these concepts and skills in their own task environment. On the other hand some familiarity of the teachers with these concepts and skills seems to be an important condition to meet their 'practicallity ethic'. This view emphasizes the prominent place of teacher assessment and school diagnosis in teacher training and developement. This teacher assessment and school diagnosis is focused on the individual teacher's perception of the task environment and the school context, and the meanings this teacher attaches to the work setting. For example, our research shows that primary school teachers differ to a considerable extent in their self-efficacy for pupil-oriented and school-oriented tasks. Another finding is that primary school techers differ in isolation not only between schools, but also within school. Moreover, these teachers' task perception is related to their level of communication with colleagues. These are

factors that might affect the extent to which training contributes to the professional development of teachers.

5. Implications

We conclude that training can be used to acquint teachers with central concepts or new taching perspectives. Training provides means for developing and trying out new practices. Starting from this point of view on training and professional development, two questions that need to be answered in more detail are:

- under what conditions do teachers accept and evenually use new information that is presented to them;
- when exactly do teachers integrate new knowledge and restructure their existing knowledge base?

In the remainder of this paper we will concentrate on the first question, specially the functions of assessment and feedback.

In literature on training a diagnosis or assessment of teacher knowledge prior to the presentation of new concepts is emphasized. Our analysis shows that assessment of prior knowledge is a necessary condition for training in the context of teacher development but not a sufficient condition. Moreover, assessment is not resticted to a one-shot diagnose prior to the training as mighr be the case in a 'rational technological' training design. Assessment of teacher's self-efficacy for the specific tasks that are central in the training program is necessary because the level of self-efficacy will affect the acceptance and use by the teacher of the training concepts. Teachers should be asked to perform tasks for which their self-efficacy is sufficient. Authoritative models should demonstrate the performance of these tasks convincingly and appropriate consultation facilities should be available to stimulate and guide low self-efficacy teachers.

Successful performance of the tasks that are central in the training program will enhance implementation and incorporation of the new concepts and skills. This implies that evaluation and feedback are necessary conditions for teacher training and development. The function of evaluation is to make the success of task performance as visible as possible. The function of feedback is to inform the teacher about the evaluation result. Especially for low self-efficay

teachers a fine tuned apporach of evaluation and feedback might be an important condition for acceptance and use of new teaching concepts, and for the restructuring of their knowledge base according to these concepts.

The conclusion of our analysis is that the "confrontation" of teachers' existing, internalized concepts and beliefs with "conflicting" externally provided training concepts stimulates and challenges the teacher to change routines and to experiment with new insights and skills. Some "cognitive dissonance" between existing beliefs or perceptions of the task environment and new training concepts might be crucial to the process of perceiving, interpreting, evaluating and integrating new teaching practices. Experimentation with new teaching concepts should lead to increases in teachers' self-efficacy, and this is especially the case for low self-efficacy teachers. The key principle is "try it, you will like it". This principle places high demands on the concept that is central in the training program as well as on the way the concept is introduced to the teachers.

The meaning that teachers attach to their task environment should be taken as the starting point for the content and design of the training. The advantages of performing according to the new concept as compared with the teachers' regular practices should have a modestly provocative effect that will serve to 'unfreeze' even low self-efficacy teachers from their existing routines. Teachers should feel free to experiment with the new teaching concept within the safe boundaries of their own classrooms. Some feeling of control (= autonomy) over this experimentation should stay in the hands of the teachers, because they are taking the risk by working with the new teaching concept. Teachers should have sufficient amount of time at their disposal for experimenttation. Only after the first experiences of success with the new teaching concept will teachers' self-efficacy be affected in a positive way.

One of the three training dimensions for professional development we discussed in this paper concerns 'Teacher learning through information or inquiry'. The dissemination model and the teacher-as-researcher, or inquiry model are the two extremes of this dimension, the interactive model is situated between these two extremes. For the professional development of low self-efficacy teachers working within 'routine' school cultures a training design according to the 'dissemination-interaction-part' of this dimension might yield better training results in terms of an increase in self-efficacy and changed appreciation of collaboration with colleagues, provided that the assessment and evaluation functions are thoroughly integrated in the training design. At

the one hand, these teachers can act as information seekers and critical judges of results. On the other hand, they try out concepts under the control and evaluation of trainers, and they are not expected to be the producers of knowledge. The professional development of high self-efficacy teachers who work within 'non-routine' school cultures, on the other hand, might be stimulated better by training designs that are situated at the 'inquiry-interaction-part' of the dimension.